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EXAMINER	
JACOB, MARY C	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

mn

Office Action Summary	Application No.	Applicant(s)
	10/506,396	CAMPBELL, ROBERT
	Examiner	Art Unit
	Mary C. Jacob	2123

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-33,35-45,47 and 48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-33,35-45,47 and 48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 September 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The response filed 12/3/07 has been received and considered. Claims 25-33, 35-45, 47, 48 are presented for examination.

2. The Examiner notes that two sets of claims were filed on 12/3/07. One set of claims, labeled "Amendment to the Claims as filed May 25, 2007 (Corrected)" was submitted in order to change the label of Claim 32 from "Previously Presented" to "Currently Amended" in the amendments to the claims that were filed 5/25/07. The claims titled, "Response to Office Action Mailed August 1, 2007" is the set of claims currently used in the examination of this application.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/3/07 has been entered.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the steps to the

method as disclosed in claim 25 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

5. The drawings are objected to because Figure 3 contains a module labeled "Future System Requirements" that is not discussed in the specification. Further, reservation clauses for a future application of subject matter are not permitted as set forth by the following: (See MPEP 608.01 (e) and (t)) *37 CFR 1.79. Reservation clauses not permitted. A reservation for a future application of subject matter disclosed but not claimed in a pending application will not be permitted in the pending application, but an application disclosing unclaimed subject matter may contain a reference to a later filed application of the same applicant or owned by a common assignee disclosing and claiming that subject matter.*

6. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The disclosure is objected to because of the following informalities:

8. The "Detailed Description of the Drawings" would be better if labeled, "Detailed Description of the Invention". Appropriate correction is required.

9. The following is a statement regarding the Detailed Description of the Invention: MPEP 608.01(g): *A detailed description of the invention and drawings follows the general statement of invention and brief description of the drawings. <u>This detailed description, required by 37 CFR 1.71, MPEP § 608.01, must be in such particularity as to enable any person skilled in the pertinent art or science to make and use the invention without involving extensive experimentation</u>... <u>Every feature specified in the claims must be illustrated, but there should be no superfluous illustrations</u>.* While the specification discloses the method set forth in the claims in the "Summary of the Invention", there is no description of the claimed subject matter set forth in the "Detailed Description of the Drawings", and further, there is no illustration of the claimed method as set forth in claim 25.

Claim Objections

10. The objections to the claims recited in the Office Action dated 8/1/07 and not repeated below have been withdrawn in view of the amendments to the claims filed 12/3/07.

11. Claims 25, 27-30 are objected to because of the following informalities. Appropriate correction is required.

12. Claim 25, step iv recites the following step, "using said defect data, the computer model of the structure and the load data for defining areas which are subject to relatively high loads". While it has been interpreted by the examiner that "defining areas which are subject to relatively high loads" is done by a computer simulation or analysis that uses the computer model (see specification, page 5, lines 16-19), the claim can be interpreted such that the "defining" is simply done by someone visually studying the computer model and performing a mental analysis. It is suggested that the claim language be revised for clarity.

13. Claim 25, step vii is directed to updating the dimensions of the structure used to create the computer model in step ii. However, the claim language set forth, specifically "using data corresponding to the data collected in step I and relating to the results of step vi instead of or in addition to the data collected in step i" is confusing. The Examiner recognizes that rejections of Claim 25 due to this limitation under 35 U.S.C. 112, second paragraph set forth in previous Office Actions, has lead Applicant to add this amended claim language. However, in reconsidering this claim limitation, in light of the specification and Applicant's remarks, the Examiner believes that the original

claim language, as set forth, was clear. That is, "updating the computer model of the structure using the results of step v", for example, as set forth in the claims filed 9/1/04, would lead to the interpretation that the dimensions of the computer model (created using initial dimensions) are updated using measured dimensions at that particular time interval, as set forth in the specification. Therefore, the Examiner suggests that Applicant change step vii in the claims filed 12/3/07 to recite "updating the computer model of the structure, using the results of step vi".

14. Claims 27-30 utilize numerals to set forth further limitations of the claimed method. However, due to how the claims depend upon one another, it appears that steps are missing. For instance, Claim 27 sets forth step x, however, although Claim 26 sets forth step ix, Claim 25, upon which Claim 27 depends, does not set forth a step ix. Further, as previously recited in prior Office Actions, Claim 30 sets forth a step xv, however, no step xiv is set forth in Claim 28, upon which Claim 30 depends. See Examiner's remarks below.

Claim Rejections - 35 USC § 112

15. The rejections of the claims under 35 U.S.C. 112, second paragraph, recited in the Office Action dated 8/1/07 and not repeated below have been withdrawn in view of the amendments to the claims filed 12/3/07.

16. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

17. Claims 25-33, 35-37, 47-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

18. Claim 25, step iii recites, "collecting data relating to an estimated load on a structure". Step iv is directed toward "defining areas which are subject to relatively high loads". Then, step v analyzes the structure by computer simulation, utilizing "the load data" and step viii further reanalyzes the structure sing "the load data". Because both "data relating to an estimated load" and the definition of "areas which are subject to relatively high loads" are interpreted to be "load data", it is therefore unclear which "load data" is utilized in the computer simulation set forth in step v and in the reanalyzing the structure in step viii. Further, if the "load data" utilized in the computer simulation in step v is referring to the "estimated load", it is unclear how step iv fits into the claimed method because data relating to the definition of "areas which are subject to relatively high loads" is not utilized anywhere in the steps of the method that follow. Step iv appears to be disconnected from the method set forth.

19. The term "relatively" in claims 25, 28, 35 and 37 is a relative term which renders the claim indefinite. The term "relatively" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

20. Claim 28 recites "data relating to the load on the structure". It is unclear which "load data" this limitation is referring to as discussed above.

21. Claim 35 is directed to a step for "defining areas which are subject to relatively high loads" prior to step v, however, step iv also sets forth "defining areas which are subject to relatively high loads". It is unclear if the step set forth in Claim 35 is in addition to, or meant to be further limiting to step iv.

22. Claim 37 is directed to a step for "defining areas which are subject to relatively high loads" prior to step v, however, step iv also sets forth "defining areas which are subject to relatively high loads". It is unclear if the step set forth in Claim 37 is in addition to, or meant to be further limiting to step iv.

Claim Rejections - 35 USC § 101

23. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

24. Claims 47 and 48 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 47 is directed to a "computer program product" that comprises "data and instructions" to carry out the method set

forth in Claim 25. Neither Claim 47 nor the specification set forth that the "computer program product" is combined with a computer readable medium. Therefore, Claim 47 appears to be directed to a program per se, which is nonstatutory subject matter. Further, Claim 48 sets forth a "data carrier" that is provided with the computer program product of claim 47. Because "data carrier" is interpreted to be directed to a transmission signal, the claim is directed to non-statutory subject matter.

Claim Rejections - 35 USC § 103

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

26. Claims 25-33, 35, 37-40, 42-45, 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott et al (US Patent 4,480,480, cited in previous office actions) in view of Carter et al, ("Automated 3-D Crack Growth Simulation", International Journal for Numerical Methods in Engineering", 47, pages 229-253, 2000), further in view Paulsamy (European Patent Application 89115607.7, cited in previous office actions).

27. As to Claims 25 and 38, Scott et al teaches: a method and processing arrangement for assessing the integrity of a structure, the method comprising the steps of: (i) collecting data relating to initial dimensions of the structure (column 11, lines 20-24; column 11, line 66-column 12, line 1); (ii) creating a computer model of the structure

using the data relating to the initial dimensions of the structure (column 11, line 66-column 12, line 1; column 16, line 64-column 17, line 4); (iii) collecting data relating to an estimated load on the structure (column 10, lines 18-20; column 14, lines 13-33; column 17, lines 5-21) (iv, v) collecting data relating to defects of the structure, and including thereafter using said defect data, the computer model of the structure and load data to define areas which are subject to relatively high loads and stresses (column 11, line 66-column 12, lines 7 and lines 27-35; column 13, lines 10-17 and lines 25-29; column 20, lines 4-10 and line 50; column 21, lines 30-34 and lines 50-61; column 22, lines 15-20); (vi) calculating, after a time interval, data relating to dimensions of the structure in high stress areas (column 10, lines 9-14; column 12, lines 1-7; column 22, lines 3-9); (vii) updating the computer model of the structure using data corresponding to the data collected in step i and relating to the results of step vi instead of or in addition to the data collected in step i (column 10, lines 9-14; column 12, lines 1-7); (viii) re-analyzing the structure, using the updated computer model and the load data in order to calculate a value for the integrity of the structure and outputting the calculated value (column 10, lines 9-23 and lines 56-62); processing means such as a computer (Scott et al: Figure 4, element 48), sensors to measure data relating to the dimensions, load and defects of the structure being adapted to transmit data in real-time (Figure 4, element 42; column 10, lines 9-14) and receiving means to analyze the data in order to update the calculation of the value representing the integrity of the structure (Figure 4, element 48 and description; column 10, lines 9-14).

28. Scott et al does not expressly teach: using known defects with the computer model and load data for defining areas which are subject to relatively high loads; the analyzing done by computer simulation; the sensors measuring dimensions of the structure.

29. Carter et al teaches a model environment for representing evolving 3-D crack geometry and for testing various crack growth mechanics through automated simulation that lessens the tedious and time-consuming operations that are usually associated with crack growth analyses (Abstract, lines 2-3 and lines 10-11) wherein an initial computer model of the structure is developed (section 1, paragraph 1, lines 2-3, "initial data preparation"; section 1, paragraph 5, lines 3-7, "geometry of a cracked body..."; section 2, paragraph 1, 5-7, "description of the solid model geometry"; section 3.1, paragraph 1, lines 4-6, "explicit description of the solid model..."), wherein known defects are included in the model (section 1, paragraph 5, lines 3-7, "geometry of a cracked body..."; section 2, paragraph 1, 5-7, "description of the solid model geometry, including the cracks"; section 3.1, paragraph 1, lines 4-6, "explicit description of the solid model, including the crack..."; section 4.1, paragraph 2; page 247, paragraph 1, lines 1-3), the resulting model used to evaluate the structural integrity of a structure (section 1, paragraph 1, lines 2-4; section 7.2, last paragraph), wherein the computer model is continuously updated using data relating to updated defect geometry (section 2, paragraph 1, lines 1-3; section 2, paragraph 3, "By means of an update function...create a new representational model...which includes the crack growth increment"; section 2,

paragraph 4, lines 1-2, "This sequence of operations...is repeated until a suitable termination condition is reached").

30. Scott et al and Carter et al are analogous art since they are both directed to the continuous assessment of the structural integrity of a structure including monitoring the growth of cracks in the structure.

31. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the structural integrity assessment system as taught in Scott et al to include using known defects with the computer model and load data for defining areas which are subject to relatively high loads and performing the analysis by computer simulation as taught in Carter et al since Carter et al teaches a model environment for representing evolving 3-D crack geometry and for testing various crack growth mechanics through automated simulation that lessens the tedious and time-consuming operations that are usually associated with crack growth analyses (Abstract, lines 2-3 and lines 10-11).

32. Scott et al as modified by Carter et al do not expressly teach measuring dimensions of the structure in high stress areas.

33. Palusamy teaches a system for monitoring wall thinning of pipes in a nuclear reactor due to corrosion and erosion (column 1, lines 1-5) that enables for efficient management and assessment of corrosion-erosion data and for the automatic evaluation of inspection data to produce an assessment of the containment integrity of at least one component (column 1, lines 38-40; column 2, lines 8-12), wherein dimensions of the structure in areas of high stress are measured and compared to

initial, or characteristic, dimensions of the structure in evaluating structural integrity for the structure (column 2, lines 8-12 and lines 34-45; column 3, lines 12-25; column 4, line 46-column 5, line 13).

34. Scott et al, Carter et al and Palusamy et al are analogous art since they are all directed to the continuous evaluation of the structural integrity of a structure.

35. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the continuous assessment of structural integrity using computer models and computer simulation as taught in Scott et al as modified by Carter et al to further include measuring dimensions of the structure as taught in Palusamy since Palusamy teaches a system for monitoring the structural integrity of pipes in a nuclear reactor due to corrosion and erosion (column 1, lines 1-5) that enables for efficient management and assessment of corrosion-erosion data and for the automatic evaluation of inspection data to produce an assessment of the containment integrity of at least one component (column 1, lines 38-40; column 2, lines 8-12).

36. As to Claim 26, Scott et al in view of Cater et al, further in view of Paulsamy teach: wherein the method comprises the step of: (ix) repeating one or more times steps vi), vii) and viii) (Scott et al: column 10, lines 9-23; Carter et al: section 2, paragraph 1, lines 1-3; section 2, paragraph 3, "By means of an update function...create a new representational model...which includes the crack growth increment"; section 2, paragraph 4, lines 1-2, "This sequence of operations...is repeated until a suitable termination condition is reached"; Paulsamy: column 1, lines 49-55).

37. As to Claims 27 and 39, Scott et al in view of Cater et al, further in view of Paulsamy teach: representation means for (x) visualizing the value calculated in step vii) (Scott et al: Figure 4, element 52; column 6, lines 44-52; column 10, lines 52-62; Carter et al: Figures 16, 21, 22, 23; Paulsamy: column 5, lines 40-55).

38. As to Claim 28, Scott et al in view of Cater et.al, further in view of Paulsamy teach: (xi) measuring an actual load on the structure, (xii) updating the data relating to the load on the structure, and thereafter (xiii) re-analyzing the structure, using the computer model and the updated load data, in order to calculate a value for the integrity of the structure, and updating the areas which are subject to relatively high stress (Scott et al: column 10, lines 9-23; column 14, lines 13-46; Carter et al: section 2, paragraph 1, lines 1-3; section 2, paragraph 3, "By means of an update function...create a new representational model...which includes the crack growth increment"; section 2, paragraph 4, lines 1-2, "This sequence of operations...is repeated until a suitable termination condition is reached").

39. As to Claim 29, Scott et al in view of Cater et al, further in view of Paulsamy teach: (xiv) repeating one or more times steps (xi), (xii) and (xiii) (Scott et al: column 10, lines 9-23; column 14, lines 13-46).

40. As to Claim 30, Scott et al in view of Cater et al, further in view of Paulsamy teach: wherein the method comprises the step of (xv) visualizing the results of step (xiii) (Scott et al: column 6, lines 44-52; column 10, lines 52-62; Carter et al: Figures 21, 22, 23 and descriptions; section 2, paragraph 1, lines 1-3; section 2, paragraph 3, "By means of an update function...create a new representational model...which includes the

crack growth increment"; section 2, paragraph 4, lines 1-2, "This sequence of operations...is repeated until a suitable termination condition is reached").

41. As to Claims 31 and 32, Scott et al in view of Cater et al, further in view of Paulsamy teach: wherein the method comprises the step of installing, after step (v), in high stress areas, a set of sensors for measuring the dimensions and load in said high stress areas (Scott et al: column 16, line 21; column 17, lines 30-32; column 21, lines 50-52; Palusamy et al: column 2, lines 34-42; column 3, lines 12-29).

42. As to Claim 33, Scott et al in view of Cater et al, further in view of Paulsamy teach: connecting the sensors to a processing means, such as a computer, for transmitting data from the sensors to the processing means in real time (Scott et al: Figure 4; column 6, lines 20-39; column 10, lines 9-14; Paulsamy: column 3, lines 21-25; column 4, lines 20-25 and lines 31-35).

43. As to Claim 35, Scott et al in view of Cater et al, further in view of Paulsamy teach: prior to step (v), estimating a minimum size defects in the structure and thereafter sing said estimated defect data, the computer model of the structure and the load data for defining areas which are subject to relatively high loads (Paulsamy: column 3, lines 12-25 and Carter et al: section 4, paragraph 1; section 4.1, paragraphs 1-2 as to estimated defect data, and further, the steps of defining areas subject to relatively high loads cited above).

44. As to Claim 37, Scott et al in view of Cater et al, further in view of Paulsamy teach: wherein the method comprises the step of prior to step (v) collecting data relating to a load history on the structure and thereafter using said load history, the computer

model of the structure and the load data for defining areas which are subject to relatively high loads (Scott et al: column 9, lines 35-40; column 10, lines 56-62; column 19, lines 4-8; column 20, lines 8-10; column 22, lines 26-35; column 30, lines 51-55).

45. As to Claim 40, Scott et al in view of Carter et al, further in view of Palusamy et al teach: wherein the sensors are adapted to measure pressure exerted on the structure (Scott et al: column 6, lines 65-68; column 8, lines 3-16).

46. As to Claim 42, Scott et al in view of Carter et al, further in view of Palusamy et al teach: wherein the sensors are adapted to measure mechanical loading on the structure (Scott et al: column 7, lines 12-14; column 14, lines 13-39).

47. As to Claim 43, Scott et al in view of Carter et al, further in view of Palusamy et al teach: wherein the sensors are adapted to measure fluid loading on the structure (Scott et al: column 19, lines 4-8, 44-46; column 20, lines 19-27, wherein sensors measure wave loading on an offshore platform structure and the loading on an ocean going vessel wherein it is understood that the loading on the vessel would include the weight on the structure and the pressure exerted on the structure from the surrounding water).

48. As to Claim 44, Scott et al in view of Carter et al, further in view of Palusamy et al teach: wherein the sensors are adapted to measure vibration (Scott et al: column 9, lines 35-39; column 13, line 19-column 14, line 12).

49. As to Claim 45, Scott et al in view of Carter et al, further in view of Palusamy et al teach: wherein the sensors are adapted to measure acceleration experienced by the structure (Scott et al: column 6, lines 65-68; column 7, lines 57-68).

50. As to Claims 47 and 48, Scott et al in view of Carter et al, further in view of Palusamy et al teach: a computer program product comprising data and instructions that after being loaded by a processing arrangement provides said arrangement with the capacity to carry out a method according to claim 25, a data carrier provided with a computer program product according to claim 47 (Scott et al: Figure 4, column 6, lines 13-56; Carter et al: section 8, paragraphs 1 and 3; Palusamy et al: Figure 1).

51. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scott et al in view of Carter et al, further in view of Palusamy et al as applied to claim 35 above, and further in view of Barich et al (US Patent 6,955, 100).

52. Scott et al in view of Carter et al, further in view of Palusamy et al teach structural integrity assessment that includes obtaining measurements of dimensions, including obtaining measurements through ultrasonic testing and with sensors (Scott et al: column 6, lines 13-20; Paulsamy: column 3, lines 15-25) and estimating minimum size of defects (Paulsamy: column 3, lines 12-25; Carter et al: section 4, paragraph 1; section 4.1, paragraphs 1-2).

53. Scott et al in view of Carter et al, further in view of Palusamy et al do not expressly teach: wherein the minimum size of the defects is estimated to be equal to a precision of measurement equipment for measuring the dimensions of the structure.

54. Barish et al teaches a method of inspecting vehicles which are used to transport commodities such as regulated and unregulated materials that meets and/or exceeds currently imposed federal government standards and provides a level of certainty with

respect to features and structures which tend to be at high risk, that accordingly enables the use, lease or sale of units with a high degree of confidence (column 4, lines 10-19), wherein the inspection method includes measuring the dimensions of defects (column 8, lines 18-35; column 37, lines 1-3), using equipment such as ultrasonic testing devices and probe gauges wherein the equipment is capable of measurements down to a minimum specification (column 26, lines 56-62; column 37, lines 5-15).

55. Scott et al in view of Carter et al, further in view of Palusamy et al and Barish et al are analogous art since they are all directed to assessing the structural integrity of a structure.

56. It would have been obvious to one of ordinary skill of the art at the time the invention was made to modify the obtaining of measurements and estimating the minimum size defects as taught in Scott et al in view of Carter et al, further in view of Palusamy et to further include wherein the minimum size of the defects is estimated to be equal to a precision of measurement equipment for measuring the dimensions of the structure as taught in Barish et al since Barish et al teaches that measuring defects includes using equipment such as ultrasonic testing devices and probe gauges wherein the equipment is capable of measurements down to a minimum specification (column 26, lines 56-62; column 37, lines 5-15).

57. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scott et al in view of Carter et al, further in view of Palusamy et al as applied to claim 38 above, and further in view of Zachary et al (US Patent 5,867,977).

58. Scott et al in view of Carter et al, further in view of Palusamy et al teach sensors for measuring pressures and loadings on a structure for an assessment of the structural integrity of a structure.

59. Scott et al in view of Carter et al, further in view of Palusamy et al do not expressly teach the sensors measured to measure temperature.

60. Zachary et al teaches a method for preserving the structural integrity of a gas turbine through a system that monitors the temperature of a working fluid with at least one temperature sensor (Abstract; column 20, lines 50-58).

61. Scott et al in view of Carter et al, further in view of Palusamy et al and Zachary et al are analogous art since they are all directed to the assessment of the structural integrity of a system.

62. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the measurement of pressures and loadings on a structure as taught by Scott et al in view of Carter et al, further in view of Palusamy et al to further include sensors to measure temperature as taught in Zachary et al since Zachary et al shows that it is known in the art that temperature could be measured with sensors for the assessment and preservation of the structural integrity of a system (Abstract; column 20, lines 50-58).

Response to Arguments

63. Applicant's arguments filed 12/3/07 have been fully considered but they are not persuasive.

64. The Examiner has considered Applicant's remarks upon the Objections to the claims due to the numbering system used (see page 6), however, the Examiner concludes that this numbering system, as applied to these claims, is confusing. The Examiner respectfully requests that Applicant consider some alternative method for setting forth the numbering in these claim limitations. It is noted that it may be possible to eliminate or re-work the use of this numbering system in Claims 27-30 to eliminate any confusion that may arise from the present numbering system. It does not appear that the steps in Claims 26, 27, 29 and 30 need to be numbered in this manner since their "steps" are not referred to in any other claims.

65. As to Applicant's remarks that the claims are allowable over the prior art (page 7), new search and consideration of the amended claims has lead to new grounds of rejection applied to the claims as set forth above.

Conclusion

66. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

67. Husseiny (US Patent 5,210,704) teaches continuous on-line monitoring of systems to predict failures at early stages before leading to catastrophic breakdown that includes structural analysis, dynamic simulation and defect data analysis.

68. Gerardi et al (US Patent 5,195,046) teaches real-time monitoring of a structure to detect disturbances and faults, including the monitoring of cracks and strains.

69. Olster et al (US Patent 6,285,320) teaches superimposing an image of a structure over a model of the structure to determine any deformities that are present in the structure.

70. Wilk (US Patent 6,678,403) teaches constructing models of defects and comparing them to models of known structural defects.

71. Brooks et al ("Integrating Real Time Age Degradation Into the Structural Integrity Process", RTO AVT Workshop on "Fatigue in the Presence of Corrosion", Corfu, Greece, 7-8 October, 1998) teaches rationale, approaches and techniques to evolve the structural integrity process to include the effects of age related degradation effects.

72. Hajela et al ("Structural Damage Detection Based on Static and Modal Analysis", 30th AIAA, ASME, ASCE, AHS and ASC, Structures, Structural Dynamics and Materials Conference, 1999, pages 1172-1182) teaches structural damage assessment using a finite element analysis.

73. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary C. Jacob whose telephone number is 571-272-6249. The examiner can normally be reached Tuesday-Thursday, 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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1/31/07

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